

# Future of Indian Aluminium Sector: Challenges and Progress

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## Abstract

The global demand for aluminium has experienced a tremendous increase in recent decades, driven by its exceptional physical and chemical properties, lightweight applications, recyclability and abrasion resistance. It has earned the title of “Metal of the future” for various reasons including the potential for carbon footprint reduction. Even after multiple times of recycling, aluminium products can act as resources at the end of their lifecycle without compromising quality. This makes the metal frontrunner in the circular economy.

Aluminium sector plays a crucial role in achieving India’s ambitious goal of attaining 5 trillion-dollar economy. In financial year 2022 (FY’22), India catered 4 million tonnes of primary aluminium which is 5.85 % of global aluminium production. Indian Aluminium market is expected to grow at a compound annual growth rate (CAGR) of 8-10 % against world average of 5.6 % and it is anticipated to be driven by the rapid growth of diversified sectors in domestic market, like - automobile, aviation, defence and small-scale industries. The metal commits an important role in the development of downstream sector, fostering MSME (Micro, Small and Medium Enterprises) ecosystem and enhancing the domestic value addition within the country. The recent trend in Indian aluminium industry is hovering over sustainability and green aluminium. Decarbonization, Net Zero emissions, waste management and zero liquid discharge are the main approaches in this endeavour.

Indian smelters have been aligning their strategies with Industry 4.0 to effectively address sustainability challenges in aluminium production in recent years. Extensive R&D efforts are underway to explore the utilization of hazardous wastes generated throughout the entire lifecycle of aluminium. By integrating environmental, social and governance (ESG) principles into the core strategies, like - fostering diversity and inclusivity in workforce, adopting electric vehicle policy and launching of green aluminium, Vedanta is aiming for reduction of carbon footprint and creating long term values for the organization while making a positive impact to achieve India’s vision of “Atmanirbhar Bharat” and Net Zero emissions by 2070. This paper provides an overview of Indian aluminium industry and Vedanta’s sustainability practices, market scenario and how the smelters are prioritizing sustainable practices and incorporating ESG considerations into their business strategies.

**Keywords:** Indian aluminium industry, Sustainable production, Environmental social and governance (ESG), Net zero emissions, Atmanirbhar Bharat.